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Formulation and Evaluation for Harbal Shampoo

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ABSTRACT

Herbal Shampoo is a cosmetic preparation which uses herbs and it is meant for washing of hair and scalp just like a regular shampoo. The herbal shampoo was formulated using natural ingredients like Piper betel (Betel leaf), Azadirachta indica(Neem), Acacia concinna (Shikakai), bbSpindus mokorossi (Reetha), Aloe barbadensis (Aloevera).The formulation at laboratory scalewas done andevaluat number of parameter to ensure its safety and efficacy. Two formulations were prepared i.e. Fl and F2 and the evaluation parameter was studied like Physical appearance, Foam stability, Wetting test, etc. Formulation-2 has shown good viscosity, wetting ability, good physical appearance as compared to other formulations.

Keywords: Herbal Shampoo Neem, Shikakai, Reetha Amla, Aloevera.

INTRODUCTION

Hair: A human has more than 2 million hair follicles, which can both benefit and harm the health of their skin. It is one of the most important components of our bodies and is generated from the ectoderm of the skin. It serves as a protective appendage for the body and is regarded as an accessory structure since it resembles the integument and contains sweat and sebum glands.

The essential component of human attractiveness is hair. Since the beginning of time, people have used herbs for cleansing, beautifying, and controlling hair. While hair has been styled, cut, and even coloured since the dawn of time, the act of washing it has received very little attention [1,] [2]. Next came the specialization of branded shampoo products for the hair and scalp, offered in multiplicity of types and forms [3][4][5]

HAIR GROWTH CYCLE

The three stages of the hair growth cycle are as follows:

1. Anagen (Growth phase): This phase lasts only 2 to 8 years, during which time 80% of the hair is growing.

2. Catagen (Involution) – this phase, which lasts only 10 to 14 days, sees a rise in the activity of hair development before the hair enters the following phase.

3. Telogen (Resting Phase) – This stage, which lasts 90 to 100 days, is when hair is resting. Every day, 50-100 hairs typically fall out at random.

The transition of the hairs into their resting condition occurs during the telogen phase. Alopecia (hair loss) is caused by losing more than 100 hair every day, albeit it may only be temporary in some cases.

IMPORTANCE OF HARBAL INGREDIENTS IN SHAMPOO

Fengreek:
Fenugreek hair oil boosts blood circulation and helps reduce dandruff. Fenugreek seeds are rich in protein, and nicotinic acid content, renowned for their capacity to fight hair fall and dandruff. It also treats dryness of hair, controls balding, and hair thinning. Fenugreek seeds help in reducing hair fall, aids in hair development, cure itchy scalp, treat hair loss, add shine and luster to your hair, and much more.

Rithafruit:
The fruit is frequently referred to as Indian soapberry. Also known as Washnut in English, Rishtak in Sanskrit, and Antuvalakayi in Kannada. The tree species

Sapindusmukorossi, sometimes referred to as Reetha, is a member of the Sapindaceae family It is mainly cultivated or seen in Western Costal Karnataka, Maharashtra, and Goa.

Aloe Vera:
Aloe vera also called Ghrita Kumari, Korphad, or Musabbar. It Is the dried juice of Aloe barbadensis miller leaves, a member of the Liliaceae family. Aloetic acid, homonataloin, aloes one chrysophanic acid, chrysamminic acid, galactouronic acid, and saponins are among the compounds found in the juice along with barbaloin, isobarbaloin, B-barbaloin, and barbaloin.

Amla:
Synonym: Emblica, Indian goose berry, amla.
Biological Source:
This consists of dried, as well as fresh fruits of the plant Emblica officinalis Gaerth (Phyllanthus emblica Linn.), belonging to family Euphorbiaceae.

Shikkai :

It is frequently referred to as Shikakai, soap-pod. It is the dried seed of the legumeceae family plant Acacia rugata. Lupeol, spinasterol, acacic acid, lactone, and the natural sugars glucose, arabinose, and rhamnose are all present in the seed extract. Additionally, it includeincludees nicotine, oxalic acid

Table1 :Harbs And Recipients

Sr . No S	Ingredient	Image	Family	Category
1.	Fengreek		Fabaceae	(Legumi nosae)
2.	Rithafruit		sapinbaceae	Indian Soapberry
3.	Aloe vera		Asphodelace ae (Liliaceae)	Oilyhairand normal hair

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4.	Amla:		Euphorbiace ae	Prevents dryness,
5.	Shikkai		Fabaceae	Traditional Ayurvedic herb

MATERIALS AND METHODS

Preparation of Herbal Liquid Shampoo:

All plant material was purchased from an ayurvedic store including ritha fruits, fenugreek seeds, amla, and shikakai.

Table No. 01: Formula of prepared shampo

Sr. No	Name of plant	Part use	Quantity	Purpose/Uses
01	Fengreek	Seeds	0.7gm	Promotes hair growth
02	Ritha	Fruits	2.1gm	Detergent
03	Amla	Fruits	6.4gm	Help inhancer hair texture
04	Shikakai	Fruits	6.4gm	Shine to hair
05	Distilled water		75ml	For soaking

Procedure:

1. Accurately weigh all ingredients and soak it for overnight.
2. Next morning (all ingredient becomes puffy and filled with water.
3. After soaking overnight) boil the ingredients in the same water on medium flame then cool the mixture and filter.
4. Methyl paraben was added for preservation and Developed shampoo.
5. It was stored in a suitable container and used for further evaluation.

Evaluation of Prepared Herbal Liquid Shampoo:
Quality control tests, such as visual inspection and physicochemical controls like pH, density, and viscosity, were carried out to analyse the manufactured formulations. Additionally, specialised testing for shampoo formulations were carried out to ensure product quality. These tests included the assessment of dry residue and moisture content, total surfactant activity, salt content, surface tension, thermal and mechanical stability, and detergency tests.

Physical appearance/visual inspection: The formulations prepared were evaluated in terms of their colour, odour, appearance, clarity, foam producing ability and fluidity [16]. The results are mentioned in table 4

Dirt dispersion: In a sizable test tube with 10ml of distilled water, two drops of shampoo were introduced. After adding 1 ml of India ink, the test was sealed with a stopper and shook ten times.It was calculated that there was None, Light, Moderate, or Heavy ink content in the foam. Two drops of shampoo were added in a large test tube contain 10 ml of distilled the test tube[17]. The results are mentioned in table 4.

Wetting time test: A canvas paper was cut into 1-inch diameter discs having an average weight of
0.449. The smooth surface of disc was placed on the surface of herbal shampoo solution the stopwatch started. The time required for the disc to begin to sink was noted down as the wetting time [18]. The results are mentioned in table 4. 1

Rheological or Viscosity evaluations: The viscosity of the shampoos was determined by using Brookfield viscometer

Foaming ability and Foam stability: Cylinder shake
Method was used for determining foaming ability. 50ml of the 1% shampoo solution was put into a 250 ml graduated cylinder and covered the cylinder with hand and shaken for 10 times. The total volumes of the foam contents after 1-minute shaking were recorded [19]. The foam volume was calculated only. Immediately after shaking the volume of foam at 1 minute intervals for 4 minutes were recorded.

Cleaning action: 5 grams of wool yarn were placed in grease, after that it was placed in 200 ml. of water containing 1 gram of shampoo in a flask. Temperature of water was maintained at 350C. The flask was shake for 4 minutes at the rate of 50 times a minute. The solution was removed and sample was taken out, dried and weighed. The amount of grease removed was calculated by using the following equation: DP= 100(1-T/C)

In which, DP is the percentage of detergency power, C is the weight of sebum in the control sample and T is the weight of sebum in the test sample[20].

Determination of pH:

a. Connect the combination pH electrode to the input socket, wash it with water and switch ON the instrument.
b. Dip the electrode in 7 pH buffer solution.
c. Set the temperature control to the buffer solution.
d. Set the function selector switch to pH position and adjust with "CALIBRATE" control till the digital display shows the precise pH value of buffer solution.

Determine percent of solids contents: A clean dry

evaporating dish was weighed and added 4 grams of shampoo to the evaporating dish. The dish and shampoo was weighed.

Stability studies: The thermal stability of formulations was

studied by placing in glass tubes and they were placed in a humidity chamber at 45°Cand 75% relative humidity. Their appearance and physical stability were inspected for a period of 3 months at interval of one month.

Nature of hair after washes:
Nature of hair after wash can be done by collecting the responses of volunteers [21].

AIM AND OBJECTIVE

Aim: To formulation and Evaluation of Harbal Shampoo.

Objective:-

Cleanse and nourish: Herbal shampoos aim to gently cleanse the hair and scalp while nourishing and protecting them with natural ingredients.

Promote healthy hair growth: Many herbal shampoos contain ingredients. That promote healthy hair growth, strengthen hair follicles, and reduce breakage.

Address specific hair concerns: Herbal shampoos can be Designed to address specific hair concerns, such as soothing an itchy scalp or reducing dandruff.

RESULT

Tabale : Result Of Evaluation Parameter

Sr. No	Parameters	F1
1	Physical appearance	
A	Colour	Brown
B	Odour	Aromatic
C	Appearance	Smooth
2	Dirt Dispersion	Moderate
3	Wetting Test	37sec
4	Foam Ability	24ml
5	Detergency and Cleansing	Good
6	Determination of pH	5.21

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